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AGRICULTURAL EDUCATION

COMPRISING SUGGESTIONS FOR SCHOOL OFFICERS AND INSTRUCTORS AS TO COURSES, EQUIPMENT, AND COMMUNITY WORK FOR AGRICULTURAL HIGH SCHOOLS IN MARYLAND

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"The time has come to undertake the study of agriculture seriously, and not merely as a means to glorify country life and to arouse enthusiasm for the possibilities of farm endeavor. Students should feel that certain definite principles should be mastered and their application understood. Yet this subject should not be made un ultra scientific that students shall be forced through long processes of laboratory method to rediscover what scientists have fully established. There can be no real substitute for the farm or the garden as a practical laboratory." (High School Agriculture, Hatch and Mayne.)

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Agricultural Education

By

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Suggestions for School Officers and Instructors as to Courses, Equipment, and Community Work for Agricultural High Schools issued by the Department of Agricultural Education, Maryland Agricultural College, August, 1914. Appendix, Boys' and Girls' Clubs.

School Rally, Prince George's County, June, 1914.

AGRICULTURAL EDUCATION

INTRODUCTION.

In planning my tour of the Agricultural High Schools of Maryland several main objects were kept in mind:

First, to study as fully as possible the principal agricultural industries of the various localities, and the school system so that the new courses of study in Agricultural Education might be planned to prepare the students, as teachers, to meet the conditions.

Second, to note the lines of community work in progress at these schools, and the facilities that are offered for instruction in agriculture.

The author is indebted to the principals, agricultural teachers and superintendents for their courtesies in furnishing the information desired.

The contents of the bulletin are not presented as a criticism of what was observed, or as a full review of what is being done. It is a statement of some of the problems with such suggestions for improvement as may prove helpful to school officials in the administration of this type of vocational education.

Probably the most striking evidence of the increasing interest in secondary agricultural education in this state as well as in other states, is the large number of schools that have provided for these courses during the last few years. There are at present twenty of these schools in Maryland. They accommodate the students of twelve out of the twenty-three counties while one of them is open to any one who may seek admission.

The first successful Agricultural High School was established at the Minnesota College of Agriculture in 1888. This was about 30 years after the advent of the American Agricultural College. Secondary Agricultural Schools of some form now exist in nearly every state in the union. While these schools vary extensively in type and management there is very little difference in their aims, scope of work or in the grade of students to whom they cater.

Three types of secondary agricultural schools exist in Maryland. First, the School of Agriculture conducted in connection with the Maryland College of Agriculture. This is commonly known as the Two Year Course in Agriculture and Horticulture; referring thereby to the special lines of work offered to these students. The second type of school is the Agricultural High School of which there are several in the state. These schools differ from the regular high school in that the indus-

trial work is their chief characteristic. The third type, and the form of school most commonly organized during the past few years, is the Agricultural Department as added to the existing high school.

The addition of an Agricultural Department to the already existing high school has become a favorite plan largely on account of the economy rendered thereby in buildings, teaching force, administration and in affording a central location for the school. In this type of school the pupils are not segregated as they are in the purely agricultural school, and, it is argued that such pupils receive a larger aspect of life through the associations and opportunity for observation. The arrangement requires the boys and girls of our rural districts to go to the nearby town for their high school training. This is not an argument against such an adjustment as some contend but is in accord with present day views regarding the centralization of schools. Modern transportation facilities and improved roads have eliminated the old time boundaries between town and country. In fact both realize their dependence one upon the other and are now working for their mutual interests.

Surrattsville High School.

The village, then, would seem to be the logical place for the Agricultural High School. It is the center of a large rural population and is usually equipped with a suitable building for the new work. The small town or village does not possess the cheap theatre or other distracting allurements which are so commonly found in the larger towns. It is easier to inculcate the high ideals and possibilities of country life in a rural high school than it is in the city schools. It solves the problem of adequate school facilities for both the village and the surrounding country by maintaining one well equipped, centrally located school instead of providing several isolated, unimproved, educational centers.

The state recognizes its obligations to all forms of public education by making annual appropriations for their support. The present laws provide for a special appropriation to schools that maintain courses in two of the vocational subjects—Agriculture, Manual Training and Domestic Science. Any high school of the state is entitled to the sum of four hundred dollars, annually, on account of the instructor of special subjects to be designated by the county school board (School Code and By-Laws of the Maryland State Board of Education). School officials of all parts of the state should take advantage of this provision of the Maryland School Laws. They should see to it that the special courses are closely related to the chief local industries. It is folly for school officers of a rural district to organize Commercial Courses and thus encourage their best young people to seek employment in the city instead of inspiring them with the opportunities offered by the development of the home industries.

What may seem to be unprofitable, rural drudgery to them now, through scientific training, may become the source of opulent fascination. The problem of keeping our sturdy young men on the farm may be largely solved by getting them to realize the possibilities lying undeveloped in the average agricultural district.

Teachers.

With the advent of the agricultural high school came the demand for teachers for this new type of school work. Inasmuch as the secondary schools were formed in nearly all of the states the demand became general; and, on account of the deficiency in the supply of trained teachers many positions are filled by teachers who possess only a partial preparation for the work. The Agricultural Colleges are responding to the new demand by forming departments of instruction for the preparation of teachers, but there necessarily must be some lapse of time before a sufficient supply of trained teachers of secondary agriculture will be available.

The present teachers of secondary agriculture in Maryland present a rather varied degree of preparation for the work. The teacher with merely a general science training is likely to be deficient in the practical application of scientific agriculture and make serious mistakes as an agricultural adviser in a community. The teacher who has had a Liberal Arts training and whose only preparation for the work is previous farm experience is uually deficient in both the science and the reasons for farm practices. A common notion among school officials exists that the teacher must be a specialist in some particular phase of agriculture. The highly specialized agricultural man is inclined to be too technical in his instruction or is apt to over emphasize his specialty. It is therefore desirable to secure a teacher who has had a general agricultural education, reenforced by a thorough training in the closely allied Sciences, Languages, Pedagogy, and the Art of teaching. Such a teacher will lay a broad foundation for the pupils of the high school rather than have them specialize at such an early age, and he will not make the subject subservient to the general sciences. He will in due time become sufficiently allied to local agricultural industries as to be of special service to the community. In addition to his collegiate training, it is highly desirable that he shall have had farm experience.

Other considerations being equal, the agricultural teacher should be a native of the state, and should have received his training in the State Agricultural College. The home teacher is more likely to be familiar with state problems, local types of agriculture as well as with the school system. In addition he is almost sure to show a greater professional interest than the transient from another state.

One of the great problems, at present, is the retention of an efficient teacher for any great length of time. This is due to the great demand for these men in other agricultural pursuits and to the limited supply of trained teachers. The problem may be reduced to a minimum by the employment of home teachers, by the adjustment of salaries and by increasing the length of the term of service. The agricultural teacher should be employed for the entire year in order that he may render the greatest possible service to the community. By employing him for a longer term his position will be on an equal footing with other agricultural callings, thus reducing the possibility of losing his services when he has become a valuable adjunct to the high school and community.

The personality is as important a consideration in the employment of the agricultural teacher as is his collegiate training. He comes in closer contact with the life of the rural community than any other school official. He, through his exemplary habits, dili-

gence, ability to do things, and general culture, must be able to command the respect of the entire community. The boy in the school must feel that his teacher knows whereof he speaks, and the parent must be assured that the child is being directed by one who is qualified to instill the correct ideals of farm life and its possibilities.

Courses of Study.

The courses of study in agriculture in the high school may assume one of several purposes. If the school in its courses aims to thoroughly ground the student in the scientific principles, in the art and the business of agriculture, it is giving its students a vocational training. These students must deal directly with crops either on school land or as home projects under the supervision of the agricultural teacher. On the other hand, if the agricultural courses are used simply to supplement the related sciences already a part of the curriculum, they lend little to his training for conducting farm operations in the future, and should be considered as merely cultural subjects. Again it may be good policy for any school to foster school or home gardens and to teach enough of agriculture to meet the needs of the child in the management of such a project. Such a course will not only meet the present needs of the child but will usually result in better training for a future avocation. Each of these purposes is worthy when exercised in the proper sphere but school officials must be careful that there be no misconception of the purpose of the agricultural work in the school.

Any prescribed course of study in agriculture should contain the fundamentals of the subject and allow sufficient latitude to the various divisions as to admit its adaptation to local needs. The four year course in agriculture as outlined by the State Department of Public Education offers ample latitude to meet the local needs of any high school in Maryland.

In order to secure the best results, the administrant of the course must be familiar with the prevailing agricultural industries of the immediate locality. For example, in the grain growing sections of the state, more time should be given to the study of the cereal crops than is necessary in the trucking regions. But in either instance the study of Plant Physiology and Plant Ecology is fundamental and should precede the major subject. The work in Farm Management may be given a wider scope in the schools catering to a general farming section by decreasing the time alloted to Horticulture and Landscape Gardening. The same principle holds good in respect to the Animal Husbandry Course in which emphasis may be placed upon either Dairying, Poultry or Beef Production.

High School Agriculture Course.

First Year.

English:	5	History:	3
Grammar		English	
Composition			
Literature			
		Manual Arts:	2
Mathematcs	5	(Double Periods)	
Arithmetic			
Algebra			
		Drawing	2
Science	5	(Optional)	
General Science			
Agriculture			
(a) Soils		Music:	1
(b) Fertilizers		(Optional)	

Second Year.

English:	5	History:	2
Composition		Maryland History	
Literature		History of Agriculture	
Spelling			
Mathematics:	5		
Algebra ½ year		Manual Arts:	2
Plane Geometry		(Double Periods)	
½ year			
Science:	7		
Biology		Drawing:	2
Agriculture		(Optional)	
(a) Plant Physiology			
(b) Plant Ecology		Music:	1
(c) Farm Crops		(Optional	

*A Four-year course in Agriculture, Teacher's Year Book, Md.

Third Year.

English:	3	History:	4
Rhetoric		Ancient	
Literature			
Spelling		Penmanship:	2
		Drawing:	2
Mathematics:	2	(Optional)	
Bookeeping			
Farm Accounting			
Science:	10		
Chemistry, including			
Chemistry of Agriculture			
State Geology			
Agriculture			
(a) Farm Animals			
(b) Dairying			
(c) Poultry			

Fourth Year.

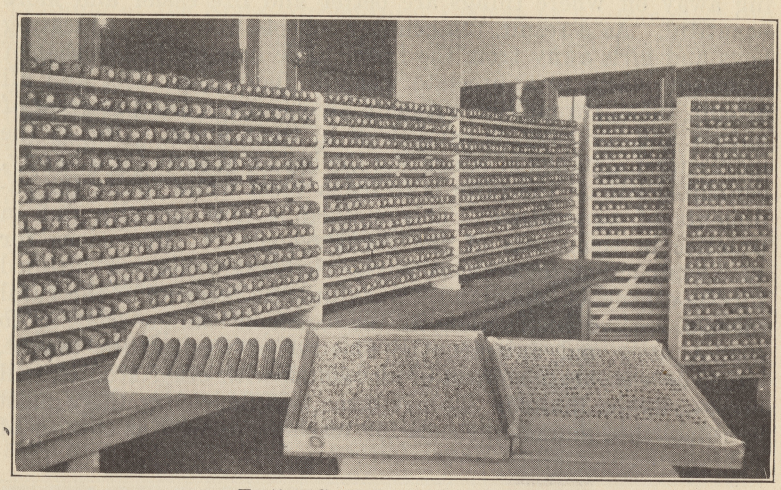
English	3	History:	5
Literature		United States	
Rhetoric		Civics	
Composition			
		Drawing:	1
Mathematics:	3	(Optional)	
Plane Geometry			
Farm Arithmetic			
Surveying			
Science:	10		
Physics, including			
Physics of Agriculture			
Agriculture			
(a) Horticulture			
(b) Farm Management			
(c) Landscape Gardening			
(d) Farm Mechanics			

The two-year course in agriculture is of necessity an abbreviated form of the four-year course, and in general is less technical. In scope it should include the fundamental principles followed by a special study of local agricultural industries and problems. It would be impossible to prescribe a course that would be applicable to all parts of the state. It is a problem for local school authorities. In general it may be said that in the first year a good text covering the elements of the subject should be made the basis of the work, and that the second year should be devoted to a detailed study of several of the most important local agricultural industries. This means that there would be separate courses given in some of the following subjects: Animal Husbandry, Dairying, Poultry, Farm Crops, Market Gardening, Fruit Growing, Farm Mechanics and Farm Management. In the first year's work special emphasis should be given to the parts of the subject in which special courses are not offered. Both the English-Scientific and the Commercial courses as outlined by the Department of Public Education provide periods and credits for two years of agricultural work.

At the present time the State Department of Public Education does not recommend a one year course of study in Agriculture. It seems, however, that the students of the Academic or College-Preparatory course might pursue very profitably the study of Elementary Agriculture in connection with their General Science work. Such a course would be the means of giving them the "correct ideas of environmental material; to get a wide, intelligent, and sympathetic acquaintance with the more evident things of nature and man's relation to them."*

There is a tendency for a large number of boys and girls to discontinue school after completing the seventh grade work. Many of these people could be enrolled in the local high school for a period of three months during the winter, and thus be given an oportunity for a vocational education that would greatly augment their meager preparation for life. Experience with High School Short Courses shows that these people after they have been out of school for a time are eager to return for additional school work, and in many instances they are finally enrolled for the full high school course. If the school facilities will not permit this being carried on in connection with the regular work, it may be conducted as an evening Extension School.

*Hummel's "Materials and Methods in High School Agriculture."



Testing Seed Corn for Farmers.

The Winter Short Courses usually include work in Agriculture, Domestic Science, Manual Training, English and Civics, Arithmetic and Farm Accounts, and Cement Work. These courses should be given in the most interesting and practical way possible. The needs of the students must always determine the character of the work. Such courses of study are useful forms of extension work for any high school. Their inauguration should receive the careful consideration of the school officers of the state.

"Throughout the entire four years of the High School Course much can be done by the teachers of literature, mathematics, manual training, (English), and others to correlate their subjects with the agricultural work and thus greatly amplify the breadth of teaching for rural life." (Year Book Department of Public Education, Maryland, 1913-14). Not only can the teachers of other subjects amplify the work in the agriculture, but the agricultural teacher may help to vitalize the work in the other courses by making timely applications as they may occur. In the last analysis the teacher is the course of study, and his ability to adapt its contents to the local needs must serve as an index to his success in the school room.

If the agricultural work in the schools of the state is to become a unified system, and is to benefit the entire school populace, it must be begun in the lower grades. "A great fault with the district schools has been an inclination to think that anything close at hand is too mean and common to be considered as subject matter for instruction. The thought has usually been that the school would prepare the learner for some brilliant call-

ing away off where things are better and life easier and more beautiful. As a result, the country schools have been educating boys and girls away from the farm. The new method is that of educating them to appreciate what is under their feet and all around them, through an intimate knowledge of the processes of nature and industry as carried on in their midst. One of the more direct methods of educating the boys and girls for a happy, contented life on the farm is to teach them while young the rudiments of agriculture. This method is now actually put in practice in thousands of the rural schools.''* Provisions for such instructions now exists in the elementary courses outlined for the schools of Maryland. But until the teachers of the rural schools receive instruction in the common things relating to plants, soils and animals, the amount of agriculture taught, either as a separate subject or correlated with other studies, will necessarily be limited. To overcome this deficiency there must be established summer schools for teachers, as well as courses of

Cultivating the School Garden—Sandy Spring High School.

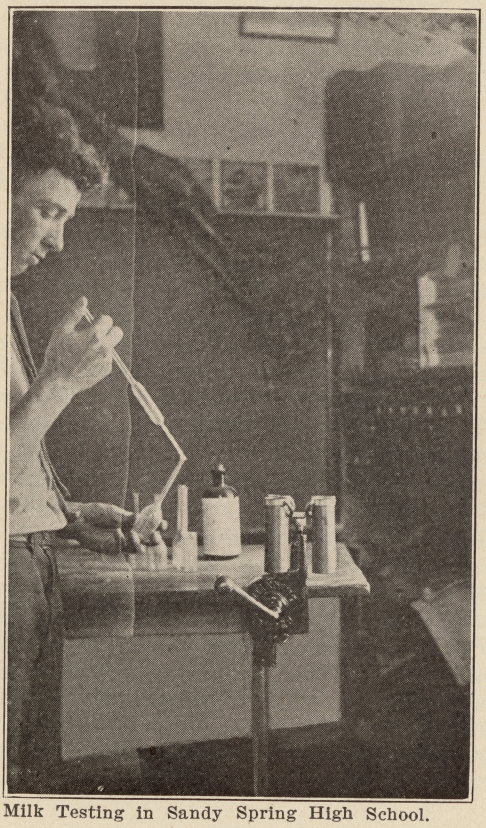
study in elementary agriculture in the Normal Schools of the state. A more economical and effective plan would be to extend the normal course by requiring the student to pursue one year of training in Agriculture and Domestic Science or Manual

*McKeever's "Farm Boys and Girls."

Training at the State Agricultural College as a prerequisite to a life certificate. County school officials should recognize the value of this agricultural training by offering their teachers substantial compensation for the time and money spent in receiving the additional professional instruction. The results obtained in the counties of the state where this practice is in vogue show that the schools are amply repaid for the added expenditure of money.

Equipment.

In most instances the agricultural courses are a newly acquired feature of the high school work. School officers in having the original plans for the buildings drawn did not anticipate the addition of the vocational departments to the schools. Consequently very few of the old buildings are wholy suited to the new work. On account of this lack of suitable rooms and the generally crowded condition of the buildings, basement rooms have been fitted up for the special departments. Too frequently



Milk Testing in Sandy Spring High School.

these quarters are poorly lighted, heated and ventilated. Many of them are unsuited for class work and the storage of materials for instruction on account of the dampness during the period in which heat is not needed in the building. If the basement rooms are used they should be well above ground in order to avoid these difficulties.

The recitation room need not be different from the ordinary recitation room except that it should be equipped with a demonstration table, with insect proof cabinets for the storage of permanent illustrative material and with standard samples of the various seeds and agricultural products. If possible, it should be adjacent to the Agricultural Laboratory. Unless a separate office is provided, the agricultural teacher should have in this room a suitable desk, and filing cases with card index for the records. Usually reference books and bulletins are stored in the recitation room. As a rule these publications will be cared for better and will be just as serviceable if they are kept in the school library, and are loaned to the students under the same regulations governing the use of other books.

The agricultural laboratory should be equipped with permanent desks, storage cabinets, bins for the storage of the material essential for each phase of the work. The desks should have both a water and gas supply so that individual work may be done. The agricultural laboratory is a work shop where the scientific principles of the subject are being worked out. It should be considered just as worthy of adequate facilities as are the Manual Training and Domestic Science Departments. In either case the educational value and scope of the work depend largely upon the facilities offered the student in acquiring knowledge and skill.

The school should aim to collect a large supply of useful illustrative material. This permanent exhibit may be placed in the agricultural room if space will permit or in the corridors of the building. The exhibit should consist of a complete set of local farm products in addition to specimens from other localities. Local school and county fairs are usually productive of a large amount of available material. However, to make the exhibit usable in the class work it must be properly labeled and catalogued.

Much of this laboratory material and apparatus may be secured from the local dealer or may be made by the students. There is, however, a tendency to use too many makeshifts. There should be purchased annually a definite amount of apparatus until the department is fully equipped after which it becomes merely a matter of maintenance. While the amount of apparatus needed will depend largely upon the number of students and the character of the work there is certain apparatus that is es-

sential for any successful agricultural teaching. Great care should be exercised in the selection of the apparatus so that the limited amount of money available will be put to the greatest possible service.

Teachers should make an annual inventory of the apparatus on hand and should include in their requisitions for supplies all the materials and apparatus that need to be purchased for the work of the succeeding year. School officials may well require of the teacher a list of the illustrative materials that he expects to use during the following year's work together with the source from which and the time in which it is to be procured. Such a list is doubly valuable in the event of a change of teachers. It also prevents the too common practice of neglecting the securing of laboratory materials until it is wanted for use. It likewise makes it necessary for the teacher to work out his laboratory course previous to the time of giving the work.

It is useless, however, to require the teacher to collect a complete laboratory supply unless he is provided with suitable storage for the materials. In schools where the teacher is not employed for the entire year, a copy of the list of supplies which must be secured during the summer, and may be had from the local farms, should be given to the boys and girls who will pursue these courses during the following year. With the list of materials wanted should be definite instructions relating to the amount and kind wanted, and the time at which it must be delivered. He should receive a reasonable remuneration for his services. If the teacher is employed for the entire year he should, of course, be held responsible for the acquisition of the necessary laboratory material. Much of the illustrative material, especially such as fruits and vegetables, is perishable. Such supplies must either be preserved or secured only when wanted. A fund should always be available for this purpose. It is almost impossible for an agricultural teacher to do successful work without some ready funds for running expenses.

That many of our Maryland Agricultural High Schools are lamentably deficient in the amount of illustrative material which they possess cannot be denied. This deficiency is not due to any negligence on the part of the teachers, but to the false economy of school officers who have not provided for them as liberally as they deserve. The supply of materials has been augmented in a number of schools by the private collections of the teachers. For the schools to rely on this source presents a number of difficulties. The teacher when leaving will take with him the collections and thus leave the school destitute of this illustrative material. Any additions to the collection, even if made during school hours, will doubtless be considered private property. The system fosters the assembling of an extensive exhibit in a special

line rather than a general collection adapted to the use of students in secondary schools. If school officials were impressed with the need of this equipment and teachers were required, annually, to make a list of materials needed or renewed, there would soon be on hand in each school a valuable and indispensable collection.

Laboratory and Field Exercises.

While many of the teachers report it difficult to secure as much illustrative material as is needed, a number of them indicate that there is a shortage of suitable laboratory exercises also. Many of the text-books available for the work are deficient in the scope of work suggested by the exercises; or, too frequently, the exercises involve processes that are too exacting for a student in a secondary school. In a large measure, this is an individual

Locating a Tile Drain, Sandy Spring High School.

teacher's problem, and it is particularly important that the teachers fully understand its aims, purposes and limitations. He must so adapt scientific methods and processes that the student will grasp not only the facts, but the underlying principles and laws as well. The exercises must be well planned and be orderly. Usually the laboratory or field exercises should precede the recitation. The teacher's outlines and directions should guide the student in obtaining the facts and in verifying them. The study period will give him an opportunity to reflect, the recitation will be an occasion for repeating the facts, for testing the student's power, for directing the way to related facts, for deepening impressions and for correcting or forming new habits.

With the beginning classes, the exercises may well be conducted by the group method by having the pupils perform each step of the experiment at the direction of the instructor. The work, however, should be individual as soon as he or she acquires some skill in handling apparatus. A great deal of interest is added to the exercises if they are divided so that the final result involves the assembling of the parts in order to illustrate the fact, law or principle involved. A good example of how an exercise may be divided into parts is that of determining the total, gravitational, capillary and the hygroscopic moisture content of a soil sample. If time will permit or the class is large enough the exercise may be extended to involve several classes and types of soil. The school should possess suitable manuals of laboratory exercises either in sufficient quantity for individual work or a library copy from which the teacher may select what is applicable, and may have mimeographic copies made for students' use.

The amount of time to be given to the laboratory work will necessarily be governed by the subject matter and the scope of the course. There should be at least one double period per week for the uninterrupted first hand study of materials relating to the subject. The double periods are essential if the class must be taken even a limited distance from the school building. Such subjects as plant and animal physiology, seed grading, judging and testing, and feeds and feeding which do not necessarily involve long exercises may be taught successfully in the ordinary periods allowed for the courses.

"The excursions or field trip should not be neglected * * * for it serves as a valuable means of bringing principle and theory in contact with real conditions and of dealing with processes and products at first hand. On the field trip many points difficult to explain and understand in the classroom are made clear and vivid. New light is thrown on the subjects studied, and desired information is fixed in memory. All excursions should be carefully planned by the instructor, and students

should be given definite directions as to procedure and observations on the trip. If possible, it will be found well to utilize a camera on such trips, recording in pictures the conditions at places visited. The pictures may later be used in reviewing the trip or be added to a permanent collection for reference or illustration.''* The accompanying illustration which shows how de-

Corn Crop Destroyed by Grub Worm.

structive the grubworm may be in a corn-field is a good example of how the lesson may be taught in the field, and the value of recording such observations. Similar examples of crop failures due to poor drainage or other causes may be taught during these field excursions. Although valuable lessons may be taught by failures, it is highly important to present to these young minds the ideals. Every community has farmers who are eminently successful in some agricultural industry. The student should visit these farms and become familiar with the practices that have made them a success.

Not only are field excursions and photographic records of the trips important assets in high school agriculture, but charts and lantern slides are equally valuable. The charts may be made in

**Bricker "Materials and Methods in High School Agriculture."

the school. The only material necessary for their construction is a sign marker outfit and a good grade of muslin. Some schools make their own lantern slides also. These, however, may be borrowed from the United States Department of Agriculture or may be purchased at about cost. At present the National Division of Agricultural Education is preparing for high school use an extensive list of charts and lantern slides. As in the field excursions the lantern slides and charts may be made the basis for a report either written or oral. Since the present tendency in our schood work is to require a large amount of written work, it seems opportune to suggest that less written and more oral reports be required. The students may be assigned certain things on which to report and the time may be so limited that all may have an opportunity to relate their observations.

Library and Text-books.

The school should have a supply of well selected books for both students' and teachers' use; it would, however, be a useless expenditure of money to buy indiscriminately the books that have appeared on the market during the last few years. There should be in addition to the text-books used in each subject a few standard reference books to give a wider scope to the course. The school should receive several agricultural journals, the state bulletins and such national bulletins as will facilitate the reference work. It is important that the bulletins be kept in files and that a card index system be maintained. Such a system will make it not only easy to find the bulletin when wanted but will keep a check on all bulletins loaned. The standard method used by libraries is the best indexing system.

No attempt is here made to give an extended discussion on the merits of the text-books suitable for agricultural high schools. Such discussions may be had by consulting L. H. Bailey's article "Development of the Text-book of Agriculture in North America," U. S. Department of Agriculture; Office of Experiment Stations, Annual Report for 1903, pages 689 to 712, and B. M. Davis' "Agricultural Education in the Public Schools" (1912), University Chicago Press.

The partial list of books given here have appeared since the publication of the above reports.

Materials and Methods in High School Agriculture, Hummel, Macmillan and Company.

The Rural School its Methods and Management, Coulter and Stone. Silver-Burdett and Company.

High School Agriculture, Mayne and Hatch, American Book Company.

Productive Farming, Davis, Lippincott.

Laboratory Manual of Agriculture, Call and Schafer, Macmillan and Company.

Soils and Soil Fertility, Whitson and Walster, Webb Publishing Company.

Field Crops, Wilson and Warburton, Webb Publishing Company.

Vegetable Gardening, R. L. Watts, Orange Judd Company.

Beginnings in Animal Husbandry, Plumb, Webb Publishing Company.

School Land.

The general impression among school authorities is that the agricultural school should maintain some land for practice work. The scope of such work is still a much debated question. Nearly all of the agricultural high schools of the state have some land that is either being used or might be used for practice work and demonstration purposes. The Ridgely school is the only one in the state that has attempted farming on a large scale. However, this land, 50 acres with buildings, has been purchased recently by the state, and will be under the control of the State Experiment Station.

Although agricultural school land should be maintained primarily for educational purposes, there seems to be no logical reason why it should not be given a commercial significance also. The drainage, fencing, and general management should demonstrate the best farm practices. Both the quality and yields of grains and other farm products will respond favorably to careful seed selection, while the improved product will always be in demand. By supplying the local community with seeds that have true merit, the schools will be performing one of the greatest services it can hope to render. On the properly managed school farm the necessary care for maintaining the quality of the products will be exercised, and the farmer will be anxious to avail himself of these superior products. While through cooperation with the State Experiment Station the school will afford not only an avenue for the distribution of improved seeds, but will be able to produce the major portion of the illustrative material so much needed in the class work.

Experience with this phase of school work seems to indicate one of two courses of procedure. The amount of school land cultivated must either be limited to what the student and teacher can manage successfully in connection with the regular work or it must be extensive enough to justify the employment of a farm hand and team. In either case the general lines of work may be the same and thus differ only in the extensiveness of the project. The exact acreage, if managed by students, will, of

course, depend somewhat upon the number enrolled, usually five acres or less being sufficient. To justify the employment of a farm hand and team the school should own at least ten acres. The farm hand may be employed either for part time or for the entire year. At Ridgely, the school owns the team and the farmer is employed for the full year, the janitor work of the school being a part of his duties. Student labor should always be employed when practicable.

At least three types of farm activities should be maintained. First, a portion of the tract should be divided into fields or plots on which the prevailing crops of the locality are grown. (In extreme cases the school may attempt to introduce a new rotation of crops, but it will require many years to accomplish effective results and may never succeed.) The small tract will present a miniature farm while the larger project will be a fairly representative demonstration of actual farm conditions. It is upon this part of the land that the school must rely for its chief revenue, and the most profitable course for any school to follow will be the production of improved local crops. Second, the school should maintain a model home garden. This project should give the student a practical course in the selection, testing and planting of garden seeds, in the management of hotbeds and coldframes, cultural methods, and in the harvesting and storing of the crop for home use. The third project may, in a limited way, be experimental. Experiments are uncertain, costly and yield knowledge only. Demonstrations are applied knowledge and yield profitable returns in a limited time. The high school should not undertake extensive investigational work but limit itself to the dissemination of the vast store of information already available. Such work as variety tests of grains, demonstrations of fertilizer requirements and cultural methods may be undertaken profitably.

Under no condition should the school attempt to grow crops that require attention during the period in which school is not in session unless some provision is made for the care and management of these crops. Unless such provision is made, it is much better to limit the practical work to home projects, but in every case it should be recognized as a part of the agricultural course and should be rewarded by giving the student due school credit.

Community Work.

While all of the special activities of the school previously discussed are of importance in so far as they effect the secondary education of the boys and girls of the farm, it is of equal importance that the school extend its activities into the farm home. Too frequently the boy after having learned the scientific prin-

ciples and practices upon which the new and successful agricultural methods rest, is handicapped in applying them because the father has not become enthusiastic in what the son has learned. The school as an educational center can bend and direct the thoughts and inclinations of the parent into the new channels, and thus secure harmony and cooperation between the various educational forces.

There are numerous avenues through which this community work may be accomplished. The important thing is for the school to select the one which will do the greatest amount of immediate good, and then develop this into an organization that will attempt the solution of all community problems.

A Corner in the Boys' and Girls' Club Exhibit at Highland High School.

Among the organizations that have been fostered by high schools and have solved successfully many of the local social and economic problems might be mentioned the Farmers' Club, Boys' and Girls' Clubs, Cow Testing Associations, Breeding Associations, Cooperative Shipping Associations, Improvement Clubs, School Fairs, Cooperative Laundries, etc. A number of schools of the state are doing valuable work for their patrons

in the form of evening meetings, demonstrations of spraying and pruning of fruit trees, helping them with crop rotations and drainage problems and with building plans. However, these facilities are not used as generally as they should be. Every school should engage in some form of extension work which will win for it not only the sympathy and support of the entire community, but which will be the means of vitalizing all of its teachings.

Appendix.

BOYS' AND GIRLS' CLUBS.

Unusual strides have been made in the past five years in the formation and perfection of rural organizations. These organizations have appeared under a variety of names, but all of them have at least some purposes in common—the development of community life, dissemination of agricultural knowledge, good roads, better market conditions, and co-operation between the town and county. But in the formation of both rural and city clubs or organizations, the welfare of the boys and girls has not received due consideration. These young people need and seek social advantages and means of entertainment. This is demonstrated by the enormous patronage of the moving picture theatre and other places of recreation. However, in addition to recreation and entertainment, they need organized study relating to the vocations in which they will soon find themselves engaged.

CLUB AIMS.

The boys' and girls' clubs, like other clubs, should be considered as a means to an end. The club work should result in greater vocational efficiency. If the club has for its purpose the study of literature or history, as is the case of reading clubs, we should naturally expect greater proficiency from its members in these lines. Likewise, if the club is organized for the study of agricultural problems, we would expect of its members advancement in farm pursuits. Or, if it is a club organized in a manufacturing town to further its own products, it should result in greater skill and efficiency in the factory. The history of Boys' and Girls' clubs, where they have been run successfully, shows that their desired ends have been accomplished. As examples, we might name such organizations as the Boy Scouts, Boys' Corn Clubs, and Girls' Canning Clubs.

Girls' Progress Clubs, Highland and Jarrettsville.

Any organization, whatever its intent may be, finds it necessary at times to divert its interests in order to serve its greatest usefulness. Such incidental pursuits might be termed the avocation of the club. The reading club might devote its interest and energy to civic improvement, or the commercial club might advocate good arterial roads leading to the city. Likewise, it is only natural to expect the Boys' and Girls' Clubs to indulge in things which interest them specifically, and are essential to the life of the organization. Such diversion may be in the form of a fair in which they show the results of their activities, or, in a picnic where stronger social bonds are formed.

KINDS OF CLUBS.

The clubs will necessarily differ in purpose and scope of work undertaken. As has been said, the ultimate end of this organized effort should be greater efficiency. The club work must be vitalized. It must pertain to the industries of the locality. In the locality where a rural high school exists, the club need not concern itself with the study of the elementary principles of agriculture, but may devote its time to more scientific problems and their applications. However, in the many localities of this state, where such advantages do not exist, the initial work of the club would be to teach the elements. The end of this type of

club would be to have the local school assume the responsibility of the elementary instruction work as soon as possible. In either instance the club is composed of individuals in the adolescent period, and in order to be effective, its educational feature must be its strongest argument.

Boys' Corn Clubs Highland and Jarrettsville.

WHO SHOULD ORGANIZE THE CLUB.

Since the clubs are educational in their character, the logical place for their organization is at the school building. The teacher of the one room school, or the principal of the graded school should call the meeting and form an organization. To begin with, it might run as simply a school club, but eventually it should reach all of the young people of the community. All that is needed is some one to take the initiative. Leaders who will keep the movement going will soon be developed. It is advisable to have some older person, who may act in an advisory capacity as a member of the club.

WHEN TO ORGANIZE.

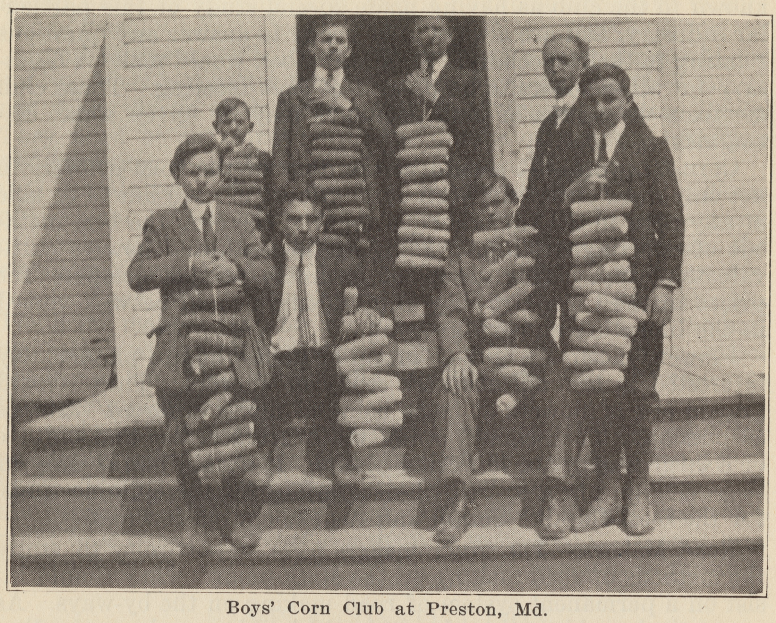
Probably the easiest time of the year to form a club of boys and girls is the autumn when school opens. At this time the children are eager for companionship, and are readily organized for special work. It is however, not essential to wait until the opening of the school year to organize. Get together a group of boys and girls who are willing to devote a definite amount of time to study, and you will have the basis of a successful club.

HOW TO ORGANIZE.

Ordinarily young people do not know parliamentary rules sufficiently well to conduct a meeting. The community leader should explain that it is necessary to have some officers for the meeting. This election of a temporary chairman and secretary usually results in the election of community leaders. The next in order is a full, clear and interesting explanation of the purposes and possibilities of a Boys' and Girls' Club. Have the prospective members enter into the discussion if possible. Finally call for a motion for organization. When it has been decided upon to organize, proceed to adopt a constitution and by-laws and then elect permanent officers. Do not name the club for the boys and girls, but leave that for the next meeting. In the meantime have a committee appointed to receive suggestive names for the club, and decide upon three to be voted on by the committee. A small prize might be awarded the boy or girl who suggests the name accepted by the club.

CLUB ACTIVITIES.

As has been said, it is unreasonable to expect the club to run successfully unless it engages in some diversions. No attempt will be made here to do more than suggest some lines of entertainment. In all of its activities, it is essential to have a definite end in view. The picnic, the basket social, the debate or the little club play, should all be community affairs. Usually it is



Boys' Corn Club at Preston, Md.

possible to make a charge of ten or fifteen cents admission provided the money thus raised is used for a worthy and definite cause. Likewise, money may be raised at the picnic or social by making a reasonable charge for the refreshments which are served. One school club has raised money by having candy sales in which the candy was made by the boys and girls. Such a sale would add a great deal of interest to the club program, to which the public should be invited.

The dramatic method of teaching provides many possibilities in the way of club entertainments. Almost any selection from the school readers may be used in this way. Older club members will be able to render more difficult plays and pantomimes.

The most important feature of a club should be its systematic study of the industries of the locality. The fact that not all boys are interested in the same phases of local industries, and not all girls in the same features of home making frequently accounts for the lack of interest shown in the club work. Its activities must be wide enough to interest all, and each member must be responsible for certain parts of the work. The following paragraphs assume that the club is located in a rural community and that its members are farm boys and girls. Also, that certain individuals are interested particularly in each of the lines of work suggested. It then follows that these members are

known to the club as having made special study of this particular industry, and are always to be ready to answer any questions relating to their specialty. A question box would make it necessary for all members to be present at each meeting. These club members or groups of club members may be given some distinguishing name.

Corn Growers.—It should be the duty of the corn growers to not only grow successfully an acre or more of corn but to be able at any time to tell the other members of the club the best methods of selecting, testing, grading of the seed, and how to cultivate the crop. This group of members should compete for prizes in the Corn Growing Contest, and should be well versed in the literature on corn growing.

Flower Queen.—A girl or group of girls who are particularly interested in the culture and study of flowers. They should grow a bed of flowers at home using as many different varieties as possible. They should study the characteristics and culture of a large number of flowering plants. It should be the duty of these club members to furnish decorations for the club meetings, for the local Sunday School and for the church services.

Road Makers.—The road makers have opportunity to study the methods of road making on the state roads. They should insist on a permanent system of road making on the by-ways. As a practical problem these boys should build a road-way leading from the main road to the home buildings. They should have opportunity to study road building, culverts and bridges.

Gardeners.—This group of members is interested in the home garden. They should study the cultural characteristics of the vegetables grown in the home garden. They should be able to answer questions at any time concerning the history, origin, decsriptions and the growing of vegetables. After a time they may be interested in growing these crops for the market.

Potato King.—The potato king grows either the white or sweet potato. Like the corn grower he makes a thorough study of his special crop. He is ready to answer any question on how to raise potatoes, increase the yields, and the best varieties for the locality. This group should have a potato growing contest.

Dairymen.—The dairymen study types and breeds of cattle, weigh the milk and feed of the cows daily, and have a butter fat test made for each animal monthly. They will study the feeding of the animals, and make a special study of the feeding value of different home grown crops.

Poultry Keeper.—The poultry keeper may be either a boy or a girl who will keep a careful record of the egg production of the flock, and of the best hens so that only good laying strains of poultry are kept. They learn to run incubators, brooders, and how to profitably feed chicks and mature fowls. This group

would probably be very large and it might be necessary to subdivide them.

Fruit Growers.—The fruit growers have a very wide field for study. They had better take up only a part of the subject in any one year. Their work will be with small fruits and tree fruits. They must be acquainted with the details of pruning, grafting and spraying.

Home Makers.—Are a group of girls who study the problems of the home. Their work includes such things as the preparation of foods, canning, the heating and ventilating of homes, the cleaning of utensils, a study of water supplies and sewerage disposal. They learn to sew and make many of their own garments. The home makers plan for the lunches at the picnics, or the basket socials at the club. Every community has a public school teacher or an older person who is willing to lend assistance to this group of club workers.

Local conditions and problems will suggest the necessity for additional groups or the renaming of the groups mentioned here. Thorough organization is essential for club success, and the promoter of any Boys' and Girls' Club should make it a point to give each individual a definite work to do. In each case allow the individual to work out the details as much as possible.

SAMPLE CONSTITUTION.

Any simple constitution, and rules of order may be adopted by the Club. One that is intended for a rural club, and one that is quite extensively used is given below. Farmers Bulletin No. 385, "Boys and Girls Clubs" will be useful to anyone who desires to start one of these clubs.

Article 1.—Name and Object.

Section 1. The name of the organization shall be————— Boys' and Girls' Club.

Section 2. The object of this club shall be, to improve ourselves, our farms, and our community. We accept the country boys' creed, as expressed in the following paragraph by Henry Osgood Grover, and will endeavor to be true to the sentiment of the creed.

"I believe that the country which God made is more beautiful than the city which man made; and that the life out of doors and in touch with the earth is the natural life of man. I believe that work with nature is more inspiring than work with the most intricate machinery. I believe that the dignity of labor depends, not on what you do, but how you do it; that opportunity comes to the boy on the farm as often as to a boy in the city; that life is freer, and larger, and happier on the farm than in the town;

that my success depends not upon my location, but upon myself; not upon my dreams, but upon what I actually do; not upon luck, but upon pluck. I believe in working while you work and playing while you play; and giving and demanding a square deal in every act of life.''

Article 2.—Membership.

Section 1. The officers of this association shall consist of a President, a Vice-President, and a Secretary.

Section 2. The President shall take charge of all meetings, and perform such duties as usually pertain to this office.

Section 3. In the absence of the President the Vice-President shall perform his duties.

Section 4. The Secretary shall keep in a book the records of the proceedings of each meeting of the club, also the name and address of each member. At each meeting he shall call the roll of members, read the minutes of the preceding meeting, and perform such duties as naturally fall to his office.

Section 5. The officers of the club shall become the executive board and shall constitute the program committee.

Section 6. The officers of the club shall be elected by ballot, at the first regular meeting in each school term; and shall hold office until their successors have been elected and qualified.

Article 4.—Meetings.

Section 1. The regular meeting of the club shall be held at the schoolhouse, unless otherwise voted, on———————— of each————————.

Article 5.—Amendments.

This constitution may be amended at any regular meeting, by two-thirds of the votes cast.

ORDER OF BUSINESS.

The following order of business is suggested for Club meetings:

1.—Roll Call by Secretary.
2.—Reading of minutes of previous meeting.
3.—Reports of committees.
4.—Program.
5.—Adjournment.

ANNOUNCEMENT.

A Department of Agricultural Education has been established at the Maryland Agricultural College. The purpose of this department is to train teachers, in agriculture and allied subjects, to teach in the high schools and other secondary schools of the state. The course is arranged to give the students a broad general knowledge of agriculture, languages, sciences and pedagogy.

Full information concerning this course may be obtained by addressing President H. J. Patterson, College Park, Maryland.

SUMMER SCHOOL.

The Agricultural College, in co-operation with the State Department of Education, conduct a six-weeks' Summer School for teachers.

The courses offered this year were designed especially for rural teachers. In the arrangement of the courses for 1915 this special feature has been retained. In addition, there has been added review courses in the Elementary School subjects and College Credit courses.

A bulletin giving a description of the courses, location, expenses and accommodations is issued by the College. For full information address the Director of the Summer School.